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EXAMINER

LE, MIRANDA

ART UNIT PAPER NUMBER

2177

DATE MAILED: 04/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/871,476

Applicant(s)

MUKKAMALLA ET AL.

Examiner

Miranda Le

Art Unit

2177

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 February 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Art Unit: 2177

DETAILED ACTION

1. This communication is responsive to Amendment A, filed 02/23/2004.
2. Claims 1-24 are pending in this application. Claims 1, 13 are independent claims. In the Amendment A, claims 1, 2, 12, 13, 24 have been amended. This action is made Final.
3. The objection to the specification (claim objection) of the invention has been withdrawn in view of the amendment.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless:

(e) the invention was described in

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-7, 13-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Salkewicz et al. (US Patent No. 5,970,502).

Salkewicz anticipated independent claims 1, 13, by the following:

As to claims 1, 13, Salkewicz teaches a method for database systems to access data from other database systems, the method comprising the steps of:

Art Unit: 2177

a first database (i.e. source database) system directly storing first data in first data blocks (i.e. segment of the source database) having a first data block size at col. 6, line 66 to col. 7, line 27, col. 8, line 8 to col. 9, line 52;

concurrently with said first database system storing first database records in first data blocks having a first data block size (i.e. the segment length of the source database) at col. 7, lines 28-65;

said first database system directly accessing a copy of second data blocks (i.e. the segment of the destination database) in which a second database (i.e. the destination database) system directly stored second database records at col. 10, lines 55-65, col. 6, lines 8-65, col. 7, line 29 to col. 8, line 29;

said second data blocks having at least one data block with a second data block size (i.e. the segment length of the destination database) different than said first data block size at col. 5, lines 16-49.

wherein said first data blocks are first atomic units (i.e. the segments contain set of database records of the source database) of storage allocated to store said first database records at col. 4, line 29 to col. 5, line 24, col. 6, line 66 to col. 7 line11;

wherein said second data blocks are second atomic units (i.e. the segments contain set of database records of the destination database) of storage allocated to store said second database records at col. 4, line 29 to col. 5, line 24, line 66 to col. 7 line11.

As to claims 2, 14, Salkewicz teaches the method further includes the step of integrating said copy of said second data blocks within said first database system as a tablespace that

Art Unit: 2177

includes said copy of said second data blocks at col. 5, lines 5-39, col. 9, line 54 to col. 10, line 23.

As to claims 3, 15, Salkewicz teaches the step of accessing a copy of second data blocks includes storing user data in said copy of said second data blocks at col. 6, lines 32-65.

As to claims 4, 16, Salkewicz teaches the method further includes the step of detaching one or more tablespaces from said second database system, wherein said one or more tablespaces include said second data blocks at col. 10, lines 1-23, col. 10, line 38 to col. 11, line 19.

As to claims 5, 17, Salkewicz teaches each data block of said copy of said second data blocks has said second data block size at col. 10, lines 49-65.

As to claims 6, 18, Salkewicz teaches the step of generating metadata that specifies a plurality of block sizes for data blocks directly accessible to said first database system at col. 10, line 55 to col. 11, line 19.

As to claims 7, 19, Salkewicz teaches said metadata defines tablespaces and specifies for each tablespace of said tablespaces a particular data block size for all data blocks in said tablespace at col. 10, lines 1-48;

the method further includes the step of integrating said copy of said second data blocks within said first database system as at least one tablespace that includes said copy of said second data blocks at col. 10, lines 1-48,

Art Unit: 2177

wherein the step of integrating includes modifying said metadata to reflect said second data block size for said at least one tablespace at col. 10, lines 1-48.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 2, 4, 9-11, 14, 16, 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Salkewicz et al. (US Patent No. 5,970,502), in view of Mukhopadhyay et al. (US Patent No. 6,032,158).

As to claims 8, 20, Salkewicz does not explicitly teach said first database system is a data warehouse and said second database system is a source database system for said data warehouse. However, Mukhopadhyay teaches this limitation at col. 3, lines 34-59, col. 4, lines 13-38.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Salkewicz with the teachings of Mukhopadhyay to include said first database system is a data warehouse and said second database system is a source database system for said data warehouse in order to provide an apparatus and method for efficiency

Art Unit: 2177

capturing and propagating changes made upon the source table of an operational database to one or more target tables of data marts (i.e. data warehouses), whereby the impact to the operational database is minimized.

As to claims 9, 21, Salkewicz does not explicitly teach the step of integrating said copy of said second data blocks within said data warehouse as a tablespace that includes said copy of said second data blocks. However, Mukhopadhyay teaches this limitation at col. 3, lines 34-59, col. 4, lines 13-38.

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Salkewicz with the teachings of Mukhopadhyay to include the step of integrating said copy of said second data blocks within said data warehouse as a tablespace that includes said copy of said second data blocks in order to provide a method and program that generates a logical volume map for the tablespaces distributed over the distributed processor system, and further generates scripts to implement the tablespace structure into a physical database.

As to claims 10, 22, Salkewicz does not specifically teach wherein first data files contain said first data blocks and second data files contain said second data blocks; and wherein the method further includes the step of generating a mapping: between said first data files and said first data block size, and between said second data files and said second data block size.

However, Mukhopadhyay teaches wherein first data files contain said first data blocks and second data files contain said second data blocks” at col. 5, line 14 to col. 6, line 18;

Art Unit: 2177

“wherein the method further includes the step of generating a mapping (col. 4, lines 39-58): between said first data files and said first data block size (col. 7, lines 1-67), and between said second data files and said second data block size at col. 8, line 59 to col. 9, line 29.

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Salkewicz with the teachings of Mukhopadhyay to include wherein first data files contain said first data blocks and second data files contain said second data blocks; and wherein the method further includes the step of generating a mapping: between said first data files and said first data block size, and between said second data files and said second data block size in order to provide an apparatus and method for efficiency capturing and propagating changes made upon the source table of an operational database to one or more target tables of data marts (i.e. data warehouses), whereby the impact to the operational database is minimized.

As to claims 11, 23, Salkewicz does not explicitly teach wherein a first tablespace contains said first data blocks and a second tablespace contains said second data blocks; and wherein the method further includes the step of generating a mapping: between said first tablespace and said first data block size, and between said second tablespace and said second data block size.

However, Mukhopadhyay teaches wherein a first tablespace contains said first data blocks and a second tablespace contains said second data blocks at col. 5, line 14 to col. 6, line 18, col. 10, lines 1-66;

Art Unit: 2177

and wherein the method further includes the step of generating a mapping (col. 4, lines 39-58): between said first tablespace and said first data block size (col. 7, lines 1-67), and between said second tablespace and said second data block size at col. col. 8, line 59 to col. 9, line 29.

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Salkewicz with the teachings of Mukhopadhyay to include wherein a first tablespace contains said first data blocks and a second tablespace contains said second data blocks; and wherein the method further includes the step of generating a mapping: between said first tablespace and said first data block size, and between said second tablespace and said second data block size in order to provide an apparatus and method for efficiency capturing and propagating changes made upon the source table of an operational database to one or more target tables of data marts (i.e. data warehouses), whereby the impact to the operational database is minimized.

As to claims 12, 24, Salkewicz does not expressly teach wherein said first database system includes a buffer cache in which said first database system stores data blocks of multiple sizes; and wherein said method further includes the step of storing said first data blocks and said second data blocks in said buffer cache.

However, Mukhopadhyay teaches wherein said first database system includes a buffer cache in which said first database system stores data blocks of multiple sizes at col. 3, line 59 to col. 4, line 12;

Art Unit: 2177

“wherein said method further includes the step of storing said first data blocks and said second data blocks in said buffer cache” at col. 3, line 59 to col. 4, line 12.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Salkewicz with the teachings of Mukhopadhyay to include wherein said first database system includes a buffer cache in which said first database system stores data blocks of multiple sizes; and wherein said method further includes the step of storing said first data blocks and said second data blocks in said buffer cache in order to provide an apparatus and method for efficiency capturing and propagating changes made upon the source table of an operational database to one or more target tables of data marts (i.e. data warehouses), whereby the impact to the operational database is minimized.

Response to Arguments

8. Applicant's arguments regarding claims 1, 13 have been amended to clarify that the first database system is concurrently handling data blocks of different sizes and that data blocks are atomic units of storage allocated to storing database records and such features are not suggested by the cited art have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 2177


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Miranda Le whose telephone number is (703) 305-3203. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Breene, can be reached on (703) 305-9790. The fax number to this Art Unit is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.


Miranda Le
April 5, 2004


GRETA ROBINSON
PRIMARY EXAMINER